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Paper 15
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

XACTWARE SOLUTIONS, INC.,
Petitioner,

v.

EAGLE VIEW TECHNOLOGIES, INC.,
Patent Owner.

Case IPR2016-00586
Patent 8,170,840 B2

Before HOWARD B. BLANKENSHIP, BRYAN F. MOORE, and STACEY G. WHITE, *Administrative Patent Judges.*

MOORE, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Petitioner, Xactware Solutions, Inc., filed a Second Corrected Petition requesting an *inter partes* review of claims 1, 2, 4, 8–18, 21, and 28 of U.S. Patent No. 8,170,840 B2 (Ex. 1001, "the '840 patent"). Paper 10 ("Pet."). In response, Patent Owner, Eagle View Technologies, Inc., filed a Preliminary Response. Paper 11 ("Prelim. Resp."). We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted "unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

For the reasons set forth below, we do not institute an *inter partes* review of the '840 patent.

A. Related Matter

The '840 patent is involved in the following lawsuit: *Eagle View Techs., Inc. v. Xactware Solutions, Inc.*, No. 2:15−cv−07025 (D. N. J.). Pet. 1.

B. The '840 Patent

The '840 patent relates to a roof estimation system that provides a user interface configured to facilitate roof model generation based on one or more aerial images of a building roof. Ex. 1001, Abstract.

Figure 1 of the '840 patent is reproduced below.

Fig. 1

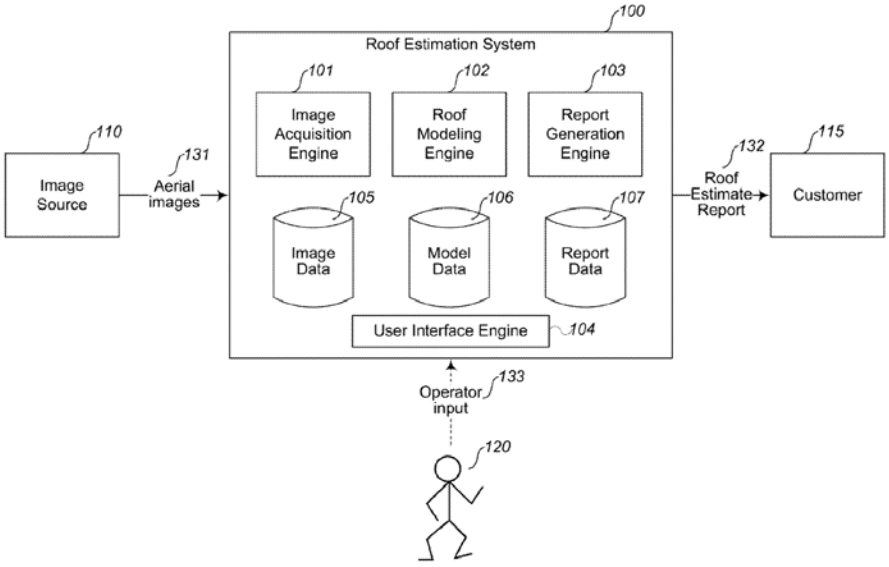

Figure 1 is a block diagram of an example Roof Estimation System ("RES"). Ex. 1001, col. 3, ll. 49–51. RES 100 includes image acquisition engine 101, roof modeling engine 102, report generation engine 103, image data 105, model data 106, and report data 107. *Id.* at col. 3, ll. 52–54. RES 100 is communicatively coupled to image source 110, customer 115, and operator 120. *Id.* at col. 3, ll. 54–56. RES 100 is configured to generate roof estimate report 132 for a specified building, based on aerial images 131 of the building received from the image source 110. *Id.* at col. 3, ll. 60–63.

C. Illustrative Claim

Of the challenged claims, claims 1, 10, and 16 are the only independent claims. Claims 2, 4, 8, and 9 depend either directly or indirectly from claim 1 and claims 11–15 depend either directly or indirectly

from claim 10 and claims 17, 18, 21, and 28 depend either directly or indirectly from claim 16.

Claim 1, reproduced below, is illustrative.

> 1. A computer-implemented method for generating a roof estimate report, the method comprising:
>
> displaying an aerial image of a building having a roof comprising a plurality of planar roof sections that each have a corresponding pitch;
>
> displaying a pitch determination marker operable to indicate pitch of a planar roof section, wherein the pitch determination marker is overlaid on the aerial image of the building having the roof;
>
> receiving, based on the displayed pitch determination marker, an indication of the pitch of one of the plurality of planar roof sections of the roof of the building; and
>
> modifying a model of the roof based on the received indication of the pitch of the one planar roof section.

Ex. 1001, 23:65–24:13.

D. Prior Art Relied Upon

Petitioner relies upon the following prior art references:

Yuan Hsieh, *Design and Evaluation of a Semi-Automated Site Modeling System*, CMU-CS-95-195, COMPUTER SCIENCE 1–76 (Nov. 1995) ("Hsieh") (Ex. 1004).

Verma et al. ("Verma") US 2006/0061566, published Mar. 23, 2006 (Ex. 1005).

MARTIN BARBER, APPLICAD PRODUCT BULLETIN, KEY FEATURES OF OUR ROOFING SOFTWARE 1–45 (Nov. 2002) ("Applicad") (Ex. 1006).[1]

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Challenged Claims	Basis	References
1, 2, 4, 8–18, 21, and 28	§ 103(a)	Hsieh and Verma
10, 11, 16, and 18	§ 103(a)	Hsieh, Verma, and Applicad
1, 2, 4, 8–18, 21, and 28	§ 102(b)	Verma
10, 11, 16, and 18	§ 103(a)	Verma and Applicad

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, the Board construes claim terms in an unexpired patent using their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). There is a presumption that a claim term carries its ordinary and customary

[1] Our references are to "Corrected" Exhibit 1006, filed February 10, 2016.

meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). The "ordinary and customary meaning" is that which the term would have to a person of ordinary skill in the art in question. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Only those terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). For purposes of this Decision, we determine that no claim terms require express construction.

B. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

In that regard, an obviousness analysis "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418; *see also*

Translogic, 504 F.3d at 1259. A prima facie case of obviousness is established when the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976).

The level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

C. Obviousness of Claims over Hsieh and Verma

Petitioner asserts that claims 1, 2, 4, 8–18, 21, and 28 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Hsieh and Verma. Pet. 10. To support its contentions, Petitioner provides detailed explanations as to how the prior art meets each claim limitation. *Id.* at 10–31. Petitioner also relies upon a Declaration of Harold Schuch, who has been retained as a witness by Petitioner for the instant proceeding. Ex. 1007.

Verma is directed to a method and apparatus for automatically generating a 3D computer model from a point cloud created by a laser radar ("LIDAR") system. Ex. 1005, Abstract. LIDAR data collection system 102 scans a scene and produces a point cloud representation of the scene. *Id.* ¶ 24. Each point within the point cloud represents an (x,y) coordinate and a depth from the LIDAR unit. *Id.* The point cloud is processed by the system to extract information about the structure of the roof of a building and that information is further processed to generate a roof model. *Id.* ¶ 10. Figure 2

is reproduced below.

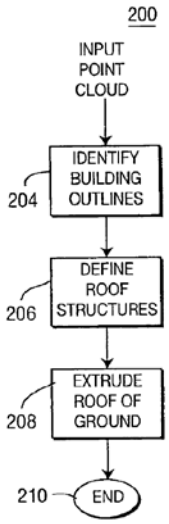

FIG. 2

Figure 2 is a flow diagram of a method for generating a 3D model of a building in an outdoor scene. *Id.* ¶ 14. At step 204, the point cloud is analyzed to identify building outlines. *Id.* at Fig. 2. Verma describes two techniques that may be used to perform this step, (1) conventional edge detection and (2) a two dimensional ("2D") drawing interface that is used manually to draw outlines of roof structures present. *Id.* ¶¶ 34–36. At step 206, the roof structures are defined and two techniques are described that may perform this step. *Id.* ¶¶ 37–39. First, the roof can be defined by one or more planes that are fit to the regions of the point cloud. *Id.* ¶ 37. The planes reveal the outline of the roof structure and that outline is represented by polygons. *Id.* The planes may be rotated or otherwise manipulated into alignment to form complex roof structures such as gable roofs. *Id.* The second technique is described in reference to Figure 3, which is reproduced below.

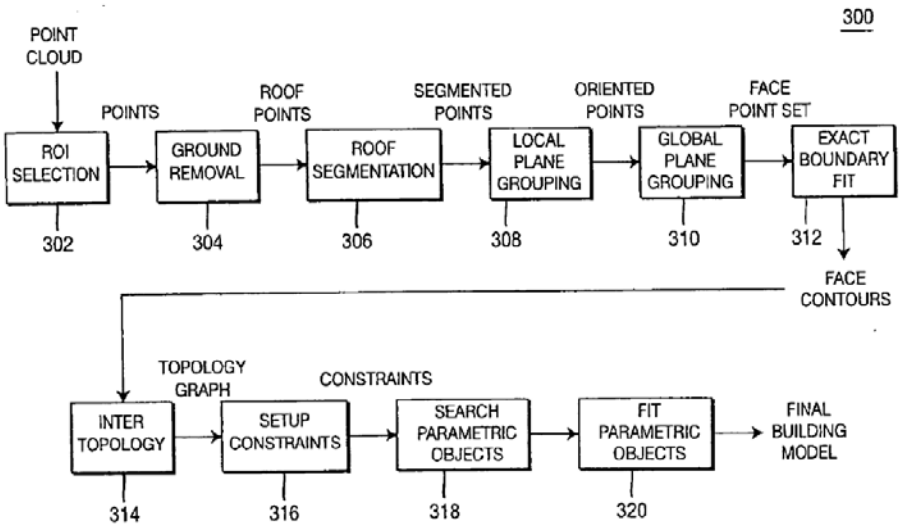

FIG. 3

Figure 3 depicts a method for modeling a roof structure using parametric shapes applied to that point cloud. *Id.* ¶¶ 38, 40. As described in Verma, this technique simplifies the modeling process and mitigates the processing used in the above described technique that utilized rotated planes and attached polygons. *Id.* ¶ 38. The process used in this technique may be automated so that the point cloud is processed in segments and the system may select a region of interest based on the content of the point cloud. *Id.* ¶ 41. At step 304, points related to the ground, objects in the scene that are not part of the building (cars, tree, and other objects), and groups of points that have too few points to be a roof are discarded from the analysis and the remaining points are considered to belong to the roof. *Id.* ¶¶ 42–43. The remaining points then are organized into parametric shapes. At step 320, those shapes may be manipulated to better fit the data. *Id.* ¶¶ 60–63. The shapes are laid over the LIDAR data so that the user can see where the model is not representing the data accurately. *Id.* ¶ 62. "Since the roofs are

composed of prismatic shapes that are specified using very few parameters, the roof shapes can be altered by directly modifying the parameter values of these prismatic shapes. A user interface is provided in the form of handles on the parametric shapes that can be dragged to alter the shape." *Id.* ¶ 62. The parametric shapes also "can be edited intuitively by operations such as push a wall, change the height, change the slope of the gable roof, and the like." *Id.* ¶ 63.

Claim 1 recites "receiving, based on the displayed pitch determination marker, an indication of the pitch of one of the plurality of planar roof sections of the roof of the building." Petitioner relies on Verma for its description of handles and operations to meet the limitation to pitch determination marker. Pet. 19–20, Ex. 1005 ¶¶ 37, 62, 63. Verma states that

> A user interface is provided in the form of handles on the parametric shapes that can be dragged to alter the shape. To facilitate adjusting the model, the modeling system provides a simultaneous display of the input LIDAR data and the model such that the model can be edited using the LIDAR data as a reference. With the model (in translucent or outline form) laid over the LIDAR data, a user can quickly understand where the model is not accurately representing the data.

Ex. 1005 ¶ 62. Verma further discloses that "the parametric shapes can be edited intuitively by operations such as push a wall, change the height, change the slope of the gable roof, and the like." *Id*. at ¶ 63.

Patent Owner argues that "Petitioner cites Verma for its description of functionality for editing certain values associated with the parametric shapes

including height and slope, where that functionality is described in terms of "operations" separate and apart from the handles described above." Prelim. Resp. 44. Additionally, Patent Owner argues "[t]hese operations do not include any of the requirements of a 'pitch determination marker,' including that there is no marker, or anything overlaid on the image that can be adjusted to specify pitch." Prelim. Resp. 44.

As noted above, Verma describes two separate techniques for defining roof structures present in that point cloud. Ex. 1005 ¶¶ 37 (attaching polygons to planes and aligning the planes to form complex roof structures) 38–56, 60–63 (fitting parametric shapes to the point cloud and manipulating those shapes to fit the data). Petitioner has not explained how these methods would work together to accomplish the pitch determination marker, nor has Petitioner provided a sufficient rationale for the combination. Petitioner's declarant, Mr. Schuch, describes the two methods and states "[a] person of ordinary skill in the art would have found it obvious to combine the "handle" user interface element and model manipulation tools (e.g., planar rotation functionality) of Verma with the three-dimensional roof generation system of Hsieh." Ex. 1007 ¶ 59. Nonetheless, he does not explain how or why handles and model manipulation tools would be combined and provides only that conclusory rationale for combining them with Hsieh rather than with each other.

Additionally, Petitioner has not explained if and how the "operations" discussed in Verma work with the "handles." Petitioner has not shown that the handles are utilized to accomplish the "change the slope of a gable roof"

operation. Nor does Petitioner argue that one of ordinary skill in the art would have found it obvious to combine the handle feature with the operations of Verma. Thus, Petitioner has not shown that an indication of the pitch of one of the plurality of planar roof sections of the roof of the building is received based on the displayed pitch determination marker.

Petitioner relies on Verma alone to teach receiving, based on the displayed pitch determination marker, an indication of the pitch of one of the plurality of planar roof sections of the roof of the building. Pet. 20, 24, 28. Thus, having reviewed the proposed ground of obviousness over Hsieh and Verma against claims 1, 2, 4, 8–18, 21, and 28, and we are not persuaded, on the record before us, that Petitioner has established a reasonable likelihood that Petitioner would prevail in its challenge to claims 1, 2, 4, 8–18, 21, and 28 on this ground.[2]

D. Remaining Grounds Challenging the Claims of the '840 Patent

Each of the remaining grounds in the Petition rely on Verma to teach receiving, based on the displayed pitch determination marker, an indication of the pitch of one of the plurality of planar roof sections of the roof of the building. Pet. 20, 24, 28, 35, 36, 41, 44, 47, 50, 52. All challenged claims contain essentially the same limitation in regard to pitch determination marker. Thus, for the reasons stated above, Petitioner has not established a

[2] In view of our determinations, we do not reach Patent Owner's allegation that Petitioner has failed to demonstrate Hsieh is a "printed publication."

reasonable likelihood that Petitioner would prevail in its challenge to any of claims 1, 2, 4, 8–18, 21, and 28 on any of the grounds in the Petition.

III. CONCLUSION

After reviewing the information presented in the Petition and the Preliminary Response, as well as the evidence of record, we determine that Petitioner has not established a reasonable likelihood that it will prevail in showing that claims 1, 2, 4, 8–18, 21, and 28 of the ’840 patent are unpatentable.

IV. IV. ORDER

Accordingly, it is

ORDERED that that the Petition is DENIED as to all challenged claims of the ’840 patent, and no trial is instituted.

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